

Climate Assessment

Office of Legislative Oversight

Bill 11-23: Motor Vehicles and Traffic – Traffic Signals, Devices, and Automated Enforcement Plan

SUMMARY

The Office of Legislative Oversight (OLO) anticipates Bill 11-23 could have a positive impact on the County's contribution to addressing climate change as the provisions of the Bill are intended to encourage safer streets for all users, which can encourage more active transportation (i.e., walking, cycling) and lead to less dependence on automobiles. This lowered dependence could have a co-benefit of lowered greenhouse gas emissions associated with transportation and enhanced community resilience. However, the significance of this impact is indeterminate.

BACKGROUND AND PURPOSE OF BILL 11-23

Vision Zero is a strategy to ultimately eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all. Since its inception in Europe in the 1990s, a growing number of jurisdictions in the United States have adopted Vision Zero action plans.¹ Montgomery County adopted its own action plan in 2016 and outlines the following goals:

Using data-informed and equitable approaches, Montgomery County will systematically update the roadway network to create complete, safe streets and build a culture of safety through purposeful campaigns and engagement to eliminate serious and fatal collisions by 2030.²

Bill 11-23 proposes the following actions to advance the County's Vision Zero goals:

- 1) require an infrastructure review for pedestrian-related collisions within a County's school zone;
- 2) prohibit a driver of a motor vehicle from making a right turn on a red at certain intersections;
- 3) require certain traffic control devices³ at crosswalks in the County's downtown and town center areas;
- 4) require the County Executive to provide an automated traffic enforcement plan; and
- 5) generally amend the law regarding motor vehicles and traffic control.

Bill 11-23, Motor Vehicles and Traffic – Traffic Signals, Devices, and Automated Enforcement Plan (The Safe Streets Act of 2023) was introduced by the Council on February 28, 2023.⁴

METHODOLOGIES, ASSUMPTIONS, AND UNCERTAINTIES

Methodology. OLO conducted a literature review of multi-modal transportation, Complete Streets, Vision Zero and their impacts on greenhouse gas emissions and community resilience, to understand the impacts of the actions proposed by Bill 11-23. OLO also spoke with County staff with expertise on Vision Zero and related initiatives, such as Complete Streets.

Assumptions. The actions proposed by Bill 11-23 could encourage constituents to use other modes of transportation besides automobiles, which could lead to a decrease in automobile trips in the County and a decrease in greenhouse gases associated with transportation. Achieving Vision Zero goals also enhances community resilience by creating safer and increased access to active and public transportation options, particularly in equity emphasis areas.

Uncertainties. There are a few uncertainties associated with the analysis of Bill 11-23: (1) Whether actions proposed by this bill will change the behavior of constituents in choosing to walk, bike, or ride public transit instead of traveling by automobile; and (2) The extent to which actions proposed by the bill will reduce pedestrian and cyclist-involved crashes at intersections.

COMPLETE, SAFE STREETS AS A STRATEGY TO DECREASE GREENHOUSE GAS EMISSIONS AND ENHANCE COMMUNITY RESILIENCE

Complete Streets are a way to create safer and more accessible streets for all users, but especially for pedestrians, cyclists, and transit riders. Complete Streets are designed to be safer for all roadway users and have safety features for walkers and bikers, such as traffic control devices like: (1) eliminating right turns on red at certain intersections; and (2) using leading pedestrian intervals, which allows pedestrians to enter and establish themselves in a crosswalk intersection before vehicles are given a green light.⁵

Complete Streets are also an important tool in the County's Vision Zero plan.⁶ Research shows that encouraging other modes of transportation besides automobiles reduces both vehicle miles traveled and vehicles per capita.⁷ This decrease in automobile dependency can lead to a decrease in greenhouse gas emissions associated with transportation.⁸

Greenhouse Gas Emissions. Carbon dioxide (CO₂) emissions associated with transportation makes up about 42% of all County greenhouse gas emissions, according to 2018 data collected by the Metropolitan Washington Council of Governments (COG). This is due in part to automobile dependency in the County, as according to survey data from 2016, more than 65% of commuters chose to drive alone.⁹ Reducing private

vehicle trips is listed as a needed action to meet the County's CO2 reduction goals, as outlined in the County's Climate Action Plan.¹⁰

By implementing policies that encourage more active transportation (i.e., walking, cycling) through improving safety and infrastructure, it can lead to less dependence on automobiles as the primary mode of transportation, which in turn can lead to reduced greenhouse gas emissions associated with transportation.¹¹

Community Resilience. Equity emphasis areas (EEAs) in the County, which have higher concentrations of BIPOC and low-income individuals, are disproportionately impacted by serious and fatal crashes. EEAs make up only 7% of land and 14% of roadway miles in the County but contain 30% of all serious and fatal roadway crashes.¹² This is due to structural and environmental racism in the allocation of public and environmental goods, which has led to less green space and less safe infrastructure for active transportation, such as a lack of sidewalks, intersections and crosswalks located on multilane, high-speed highways in predominantly BIPOC and low-income communities.¹³

Improving infrastructure and traffic patterns to promote safer active transportation in the County, especially in EEAs, can enhance community resilience. Safer access to additional modes of transportation increases access to stores, doctor offices, and other destinations, thus improving community resilience.¹⁴ More active modes of transportation can also promote physical activity and reduce health disparities.¹⁵

Further, for improvements in recovering from climate shocks, such as extreme weather events, increased access to transportation routes and services enable communities to access evacuation routes, rescue services, and other resources during an emergency. This is especially critical for communities where fewer families have access to a vehicle and depend on walking, cycling, or public transportation for travel.¹⁶

Conclusions. Overall, reducing automobile dependency and increasing access to resources such as public transit stops, grocery stores, work, and health care facilities via active transportation can enhance community resilience and lead to a reduction in greenhouse gas emissions associated with transportation in the County.¹⁷ However while some studies have shown a causal link between increased infrastructure and policies that encourage multi-modal transportation, some experts suggest policies encouraging more active and public transportation alone may not have the intended effect of shifting away from personal vehicle use or reducing GHG emissions.¹⁸ Achieving these outcomes may require a comprehensive plan with policies that specifically target a decrease in personal vehicle use (i.e., congestion pricing) and make active or public transportation the easier, more convenient choice.¹⁹

ANTICIPATED IMPACTS

The purpose of Bill 11-23 is to advance the County's Vision Zero goals by eliminating serious and fatal crashes through specific transportation initiatives, including prioritizing student safety in school zones, providing more access for pedestrians at crosswalks, prohibiting right turns on red in certain intersections, and requiring a plan for increased automated traffic enforcement.

These initiatives are meant to update the roadway network to create safe streets and increase safety for pedestrians and cyclists, particularly in equity-emphasis areas where constituents are more likely to experience an injury or fatality as a pedestrian and/or bicyclist. Increasing safety and access for pedestrians and cyclists can encourage more constituents to choose these modes of travel, rather than individual automobile travel, which could lead to a decrease in greenhouse gas emissions and the enhancement of community resilience.

OLO anticipates Bill 11-23 could have a positive impact on the County's contribution to addressing climate change as the provisions of Bill 11-23 are intended to encourage safer streets for all users, which can lead to less dependence on automobiles. This lowered dependence could have co-benefits of lowered greenhouse gas emissions associated with transportation and enhanced community resilience. However, the significance of this impact is indeterminate.

RECOMMENDED AMENDMENTS

The Climate Assessment Act requires OLO to offer recommendations, such as amendments or other measures to mitigate any anticipated negative climate impacts.²⁰ OLO does not offer recommendations or amendments as Bill 11-23 could have a positive, indeterminate impact on the County's contribution to addressing climate change, including the reduction and/or sequestration of greenhouse gas emissions, community resilience, and adaptive capacity.

CAVEATS

OLO notes two caveats to this climate assessment. First, predicting the impacts of legislation upon climate change is a challenging analytical endeavor due to data limitations, uncertainty, and the broad, global nature of climate change. Second, the analysis performed here is intended to inform the legislative process, not determine whether the Council should enact legislation. Thus, any conclusion made in this statement does not represent OLO's endorsement of, or objection to, the bill under consideration.

PURPOSE OF CLIMATE ASSESSMENTS

The purpose of the Climate Assessments is to evaluate the anticipated impact of legislation on the County's contribution to addressing climate change. These climate assessments will provide Council with a more thorough understanding of the potential climate impacts and implications of proposed legislation, at the County level. The scope of the Climate Assessments is limited to the County's contribution to addressing climate change, specifically upon the County's contribution to greenhouse gas emissions and how actions suggested by legislation could help improve the County's adaptive capacity to climate change, and therefore, increase community resilience.

While co-benefits such as health and cost savings may be discussed, the focus is on how proposed County bills may impact GHG emissions and community resilience.

CONTRIBUTIONS

OLO staffer Kaitlyn Simmons drafted this assessment.

¹ [Vision Zero Homepage, Vision Zero Network, Accessed 3/6/23](#)

² [Introduction Staff Report for Bill 11-23, Montgomery County Council, Introduced February 28, 2023.](#)

³ Certain traffic control devices include a "leading pedestrian interval" (LPI), which gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication.

⁴ [Introduction Staff Report for Bill 11-23, Montgomery County Council, Introduced February 28, 2023.](#)

⁵ ["Complete Streets", U.S. Department of Transportation, Accessed 3/8/23](#)

⁶ ["Complete Streets Design Guide", Montgomery Planning, Accessed 3/8/23.](#)

⁷ ["Automobile Dependency as a Barrier to Vision Zero, Evidence from the States in the USA", Ahangari, H., Atkinson-Palombo, C., and Garrick, N. W., 8/12/17.](#)

⁸ ["Core Elements for Vision Zero Communities", Vision Zero Network, 11/2018.](#)

⁹ ["Montgomery County Trends: A Look at People, Housing, and Jobs Since 1990", Montgomery Planning, 01/2019.](#)

¹⁰ ["Montgomery County Action Plan", Montgomery County Government, 06/2021](#)

¹¹ ["Public Health Benefits of Strategies to Reduce Greenhouse-Gas Emissions: Overview and Implications for Policy Makers", Haines, A., et. al., 11/25/09, "Benefits of Shift from Car to Active Transport", Rabl, A. and Nazelle, A. 10/4/11](#)

¹² ["Vision Zero 2030 Action Plan" Montgomery County Government, FY 22-23 Work Plan.](#)

¹³ ["Socioeconomic and Racial Disparities of Sidewalk Quality in a Traditional Rust Belt City", Rajaei, M., Echeverri, B., Zuchowicz, Z., Wiltfang, K., and Lucarelli, J., 11/19/21., "Equity Emphasis Areas for TPB's Enhanced Environmental Justice Analysis", Metropolitan Washington Council of Governments", Accessed 3/9/23, "White Men's Roads through Black Men's Homes: Advancing Racial Equity Through Highway Reconstruction", Archer, D., 3/10/20](#)

¹⁴ ["Climate Change and Environmental Planning: Working to Build Community Resilience and Adaptive Capacity in Washington State, USA.", Saavedra, C. and Budd, W., 07/2009.](#)

¹⁵ ["Socioeconomic and Racial Disparities of Sidewalk Quality in a Traditional Rust Belt City", Rajaei, M., Echeverri, B., Zuchowicz, Z., Wiltfang, K., and Lucarelli, J., 11/19/21.](#)

¹⁶ ["Community Resilience Indicator Analysis: Commonly Used Indicators from Peer-Reviewed Research: Updated for Research Published 2003-2021.", Federal Emergency Management Agency, 09/22.](#)

¹⁷ ["Promoting Physical Activity and Reducing Climate Change: Opportunities to Replace Short Car Trips with Active Transportation.", Maibach, E., Steg, L., and Anable, J., 10/2009.](#)

¹⁸ ["Evaluating the Impacts of New Walking and Cycling Infrastructure on Carbon Dioxide Emissions from Motorized Travel: A Controlled Longitudinal Study", Brand, C., Goodman, A., and Ogilvie, D., 9/1/2014.](#)

¹⁹ ["Case Study Series: Multi Modal Transportation: Making the Link Between Climate Action and Road Safety", Parachute Vision Zero, 01/2021.](#)

²⁰ Bill 3-22, Legislative Branch – Climate Assessments – Required, Montgomery County Council, Effective date October 24, 2022